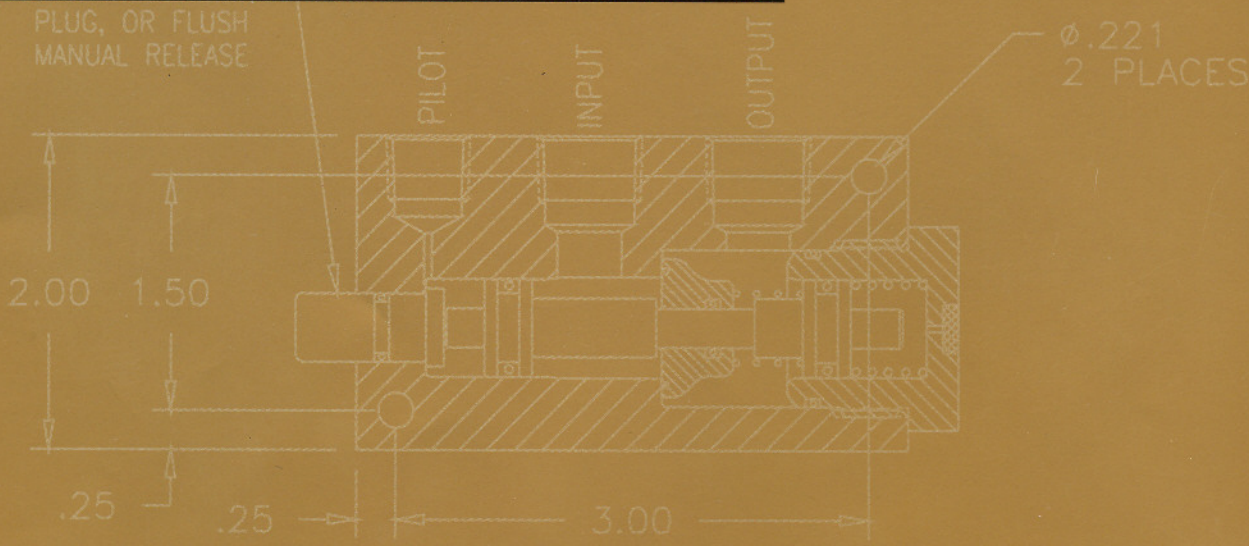
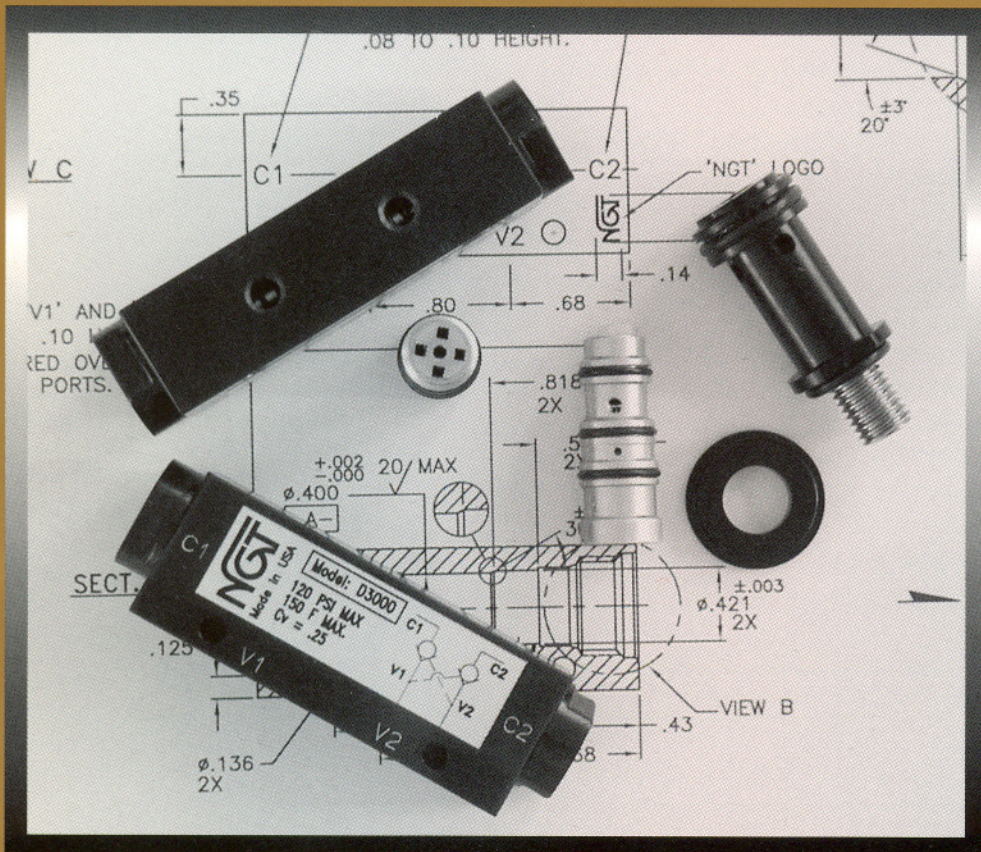


# NGT

## PNEUMATIC VALVES

NEW PRODUCTS NOW AVAILABLE



**FLOW CONTROLS • AUTO RELEASE • BSPP PORTS • EASY REPAIR • LONGER LIFE • SPECIALS**

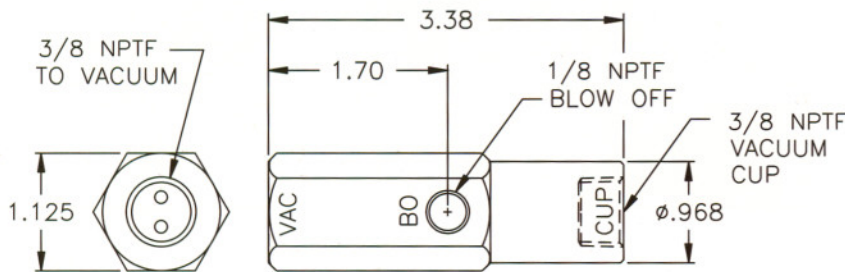
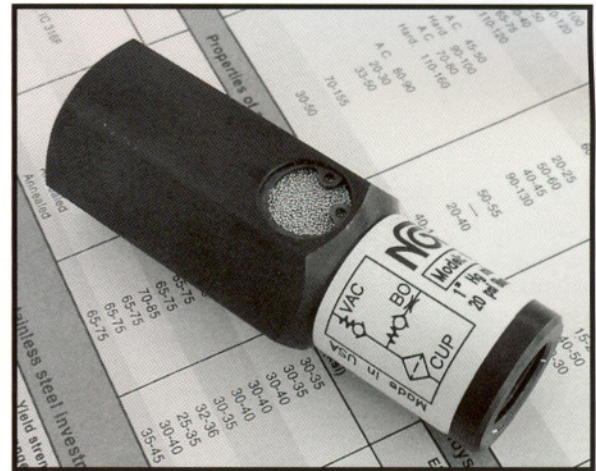
# 3/8 NPTF Vacuum-Loc Valve

Available in May 2005

- Quiet Release
- Self Cleaning Filter
- Bubble Tight

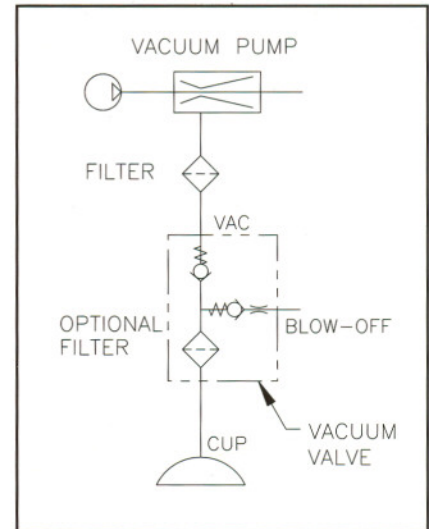
## Basic Operation:

Vacuum is applied to the valve port in order to pick up a part. Pressure is applied to eject the part from the vacuum cup. The internal check maintains vacuum even when the supply is removed. The internal filter keeps particles from entering the system and causing problems. The filter is self-cleaning with every cycle.



## Operating Data:

Min. Blow Off:	15-20 psi
Temp Range:	30° - 150° F
Vacuum Cracking Pressure:	1 in Hg.
Cv:	.60
Service:	Properly filtered and lubricated air or dry air
Internal Filter:	60 Micron



Description	Model No.
No Filter	<b>V6200</b>
With Filter	<b>V6200F</b>

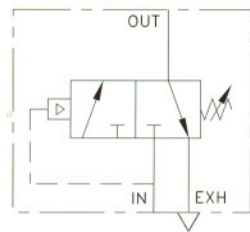


# 1/4 NPTF Sequence Valve

- Bubble Tight
- Adjustable

## Basic Operation:

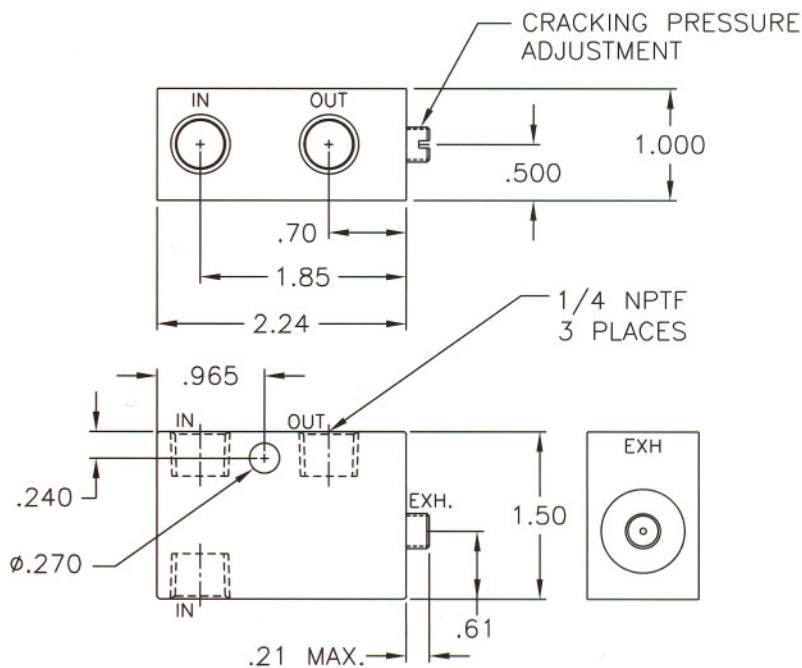
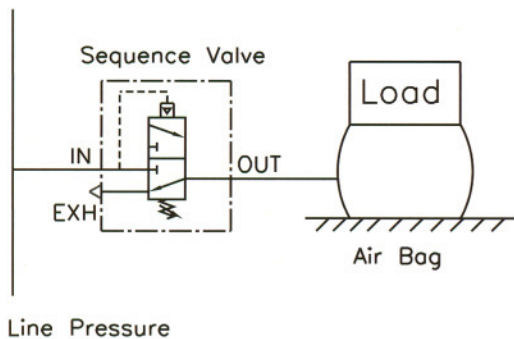
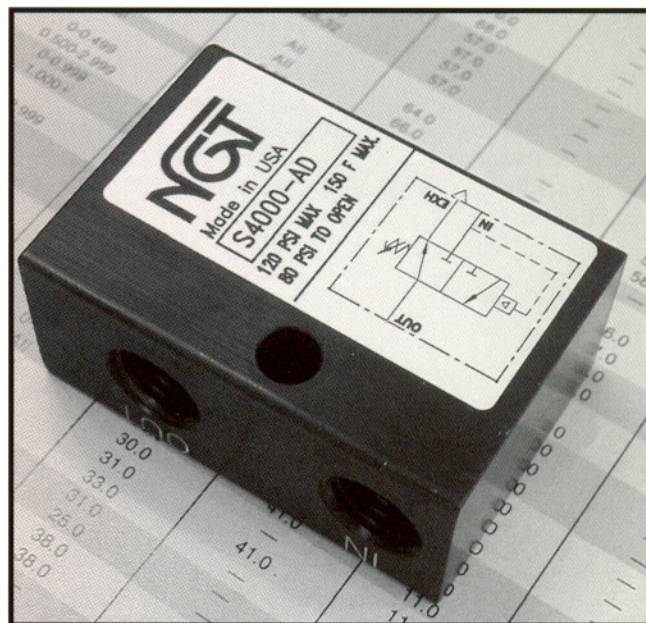
Line pressure is connected to the input port. When the pressure reaches a preset value, the valve opens, supplying pressure to the output port. When the input pressure drops below the output pressure, the shuttle shifts and the output air is released to atmosphere.



## Operating Data:

Pressure Range: 20 - 120 psi  
 Temp Range: 30° - 150° F  
 Flow Capacity (CV): .28 (input to output)  
 .50 (exhaust)  
 Cracking Pressure: Adjustable from 30 to 80 psi.  
 Service: Properly filtered and lubricated air or dry air

Model No.	S4000-AD
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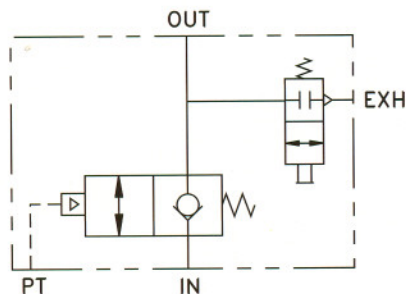


# 10-32 Pilot-Operated-Check Valve to Maintain Position

- Manual Release to Atmosphere
- Bubble Tight Locking
- Swivel Mount
- Small Package

## Basic Operation:

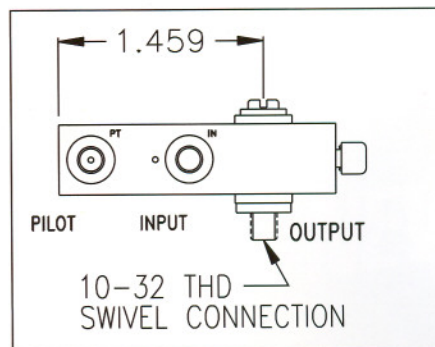
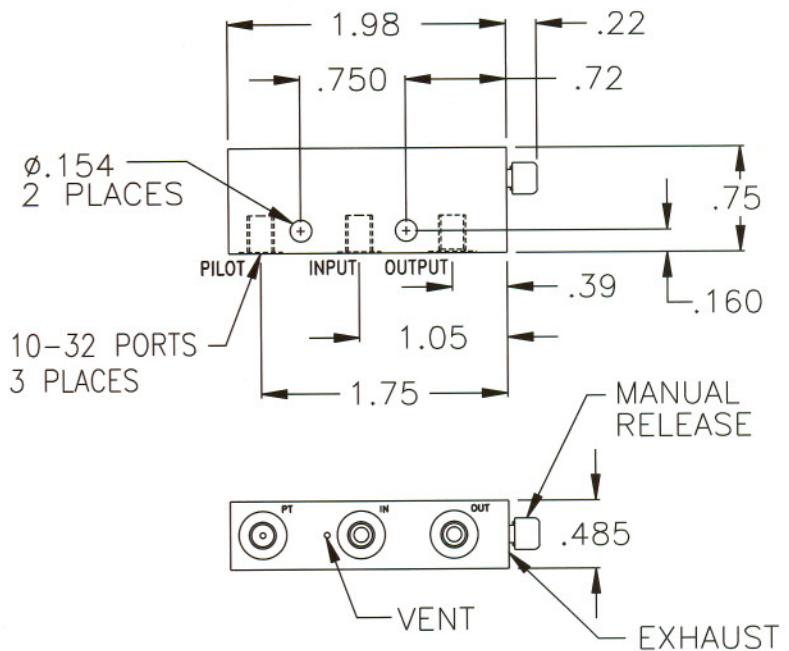
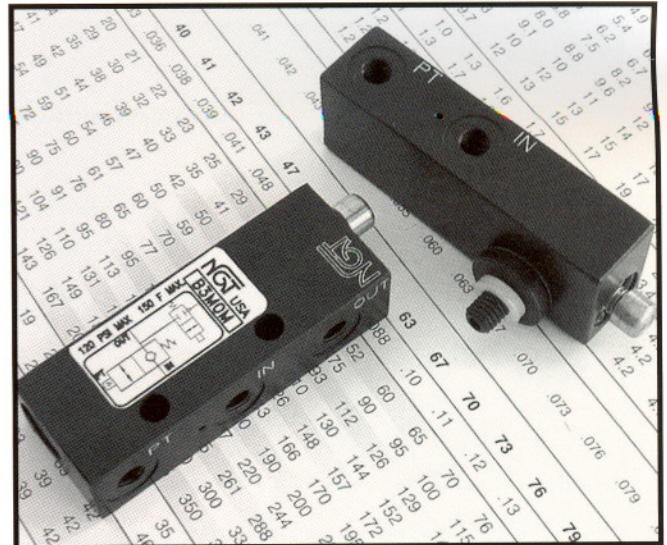
Locks any pneumatic device in position when a pressure drop or total loss of pressure occurs. Manual release exhausts trapped air to atmosphere, not back thru the control valve.



## Operating Data:

Pressure Range:	25 - 120 psi
Min. Pilot Pressure:	20 psi
Temp Range:	30° - 150° F
Cycle Rate:	1 cycles/sec. max.
Flow Capacity (Cv):	.15
Cracking Pressure:	1 psi
Pilot Ratio:	2.2:1 @ 80 psi 1.8:1 @ 40 psi 1:1 @ 20 psi
Service:	Properly filtered and lubricated air or dry air

Description	Model No.
Without Swivel	<b>B3M0M</b>
Swivel Mount	<b>B3S0M</b>



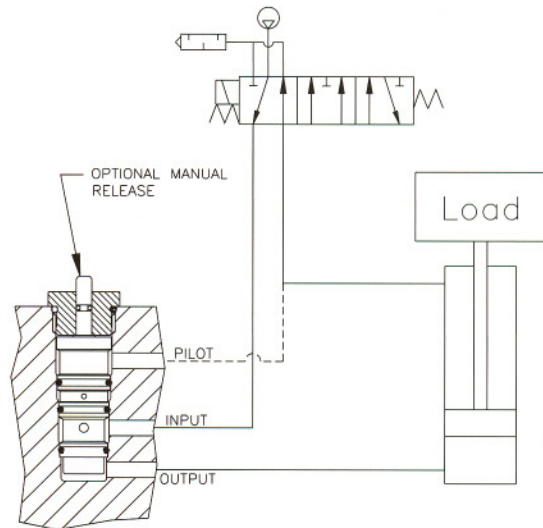
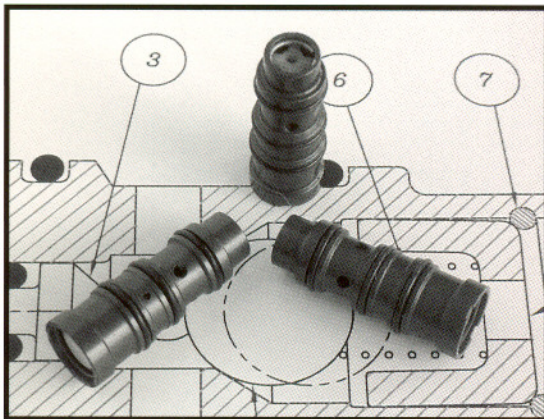
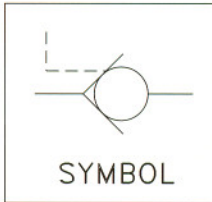
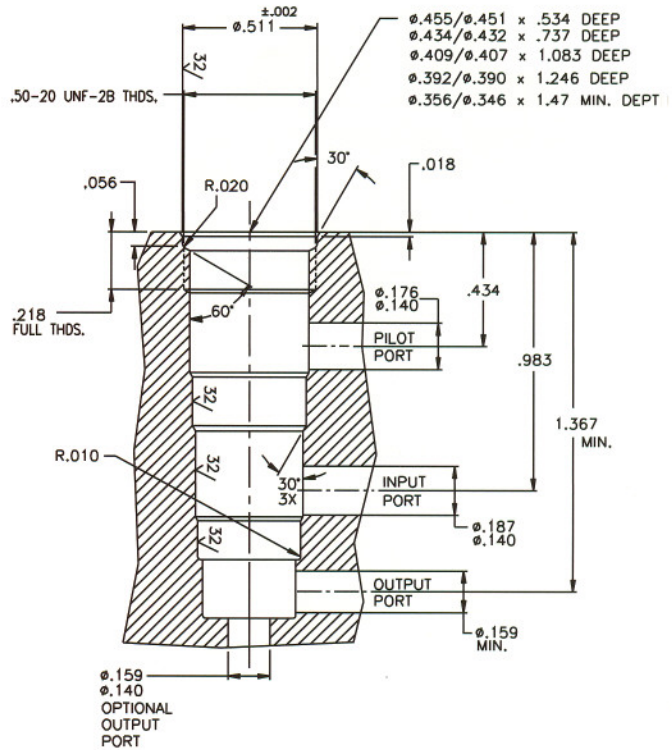
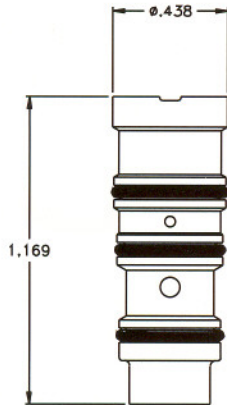
ABOVE DIMENSIONS ALSO APPLY TO THE SWIVEL

# Pilot Operated Check Valve Cartridge For OEM Projects

- Bubble Tight
- Small Size
- Integral Part of Project
- Manual Release

## Basic Operation:

Maintain position in the event of a drop in pressure or a total loss of pressure. Optional manual release removes trapped air before maintaining the system (OSHA requirement).



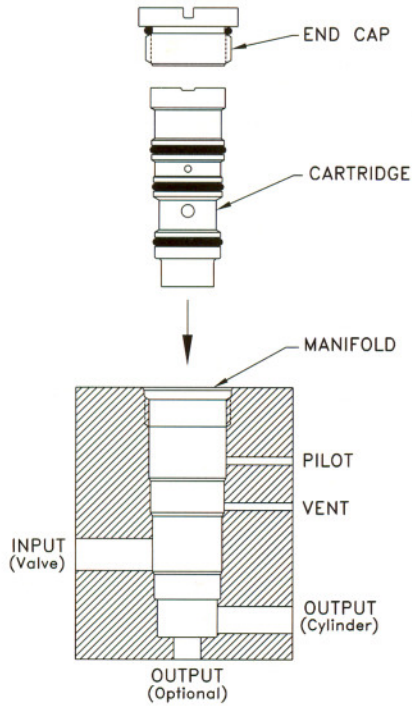
## Operating Data:

Pressure Range: 20 - 120 psi  
 Temp Range: 30° - 150° F  
 Flow Capacity (Cv): .25  
 Cracking Pressure: 2 psi  
 Pilot Ratio: 2.3:1 @ 80 psi  
 Service: Properly filtered and lubricated air or dry air

Cartridge Models	
Cartridge	<b>BC300</b>
Cartridge w/ End Cap	<b>BC300E</b>
Cartridge w/ Manual Release cap	<b>BC300M</b>
Cartridge w/ Flush Manual Release Cap	<b>BC300FM</b>

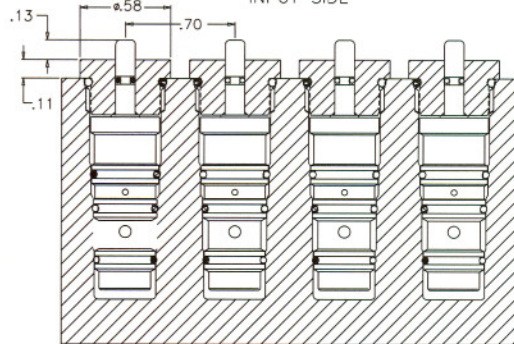
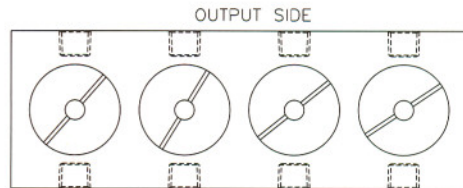
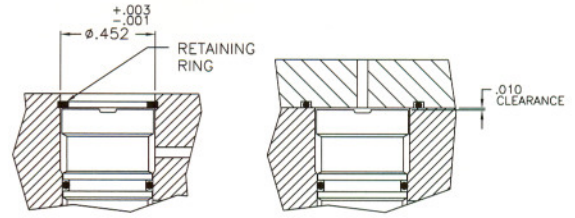
# OEM Manifold Configurations

## Cartridge Assembly Sequence



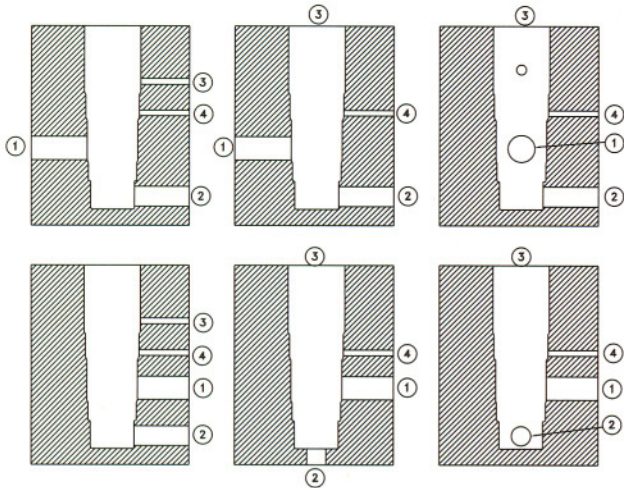
## Alternate Cartridge Assembly

The cartridge can be anchored with a standard internal retaining ring or a cover plate.



## Multiple Cartridge Manifold

Multiple cartridges to lock multiple devices. [Note: manual button to release trapped air]



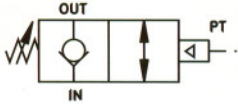
- 1) INPUT (VALVE)
- 2) OUTPUT (CYLINDER)
- 3) PILOT
- 4) VENT

## Different Manifold Configurations

Here are some examples of possible cavity configurations that will work with the cartridge.

# Adjustable 'Quick Stop' Cartridge Pilot Operated Check Valve for OEM Manifolds

- Adjustable Pilot Pressure
- Faster Stops
- Seals Bubble Tight
- High Flow

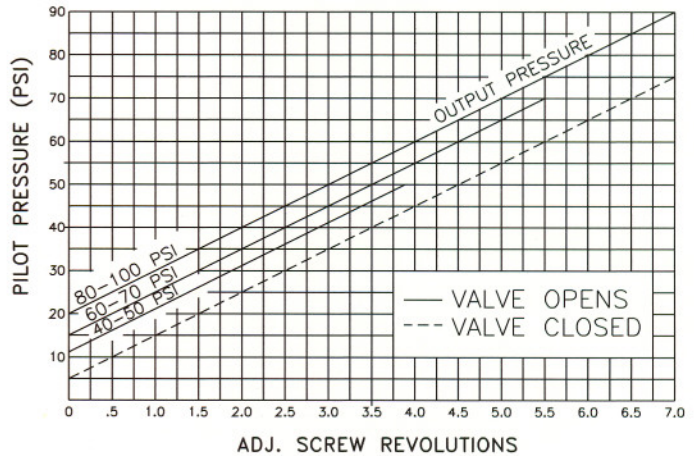
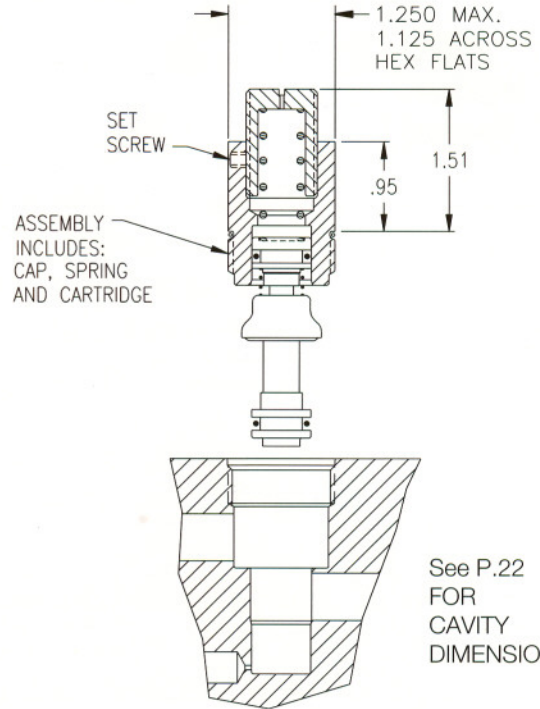


## Advantage:

Standard pilot-operated check valves will not close fast enough when back pressure is present in the pilot line. Increasing the spring pressure causes the valve to close at a higher pilot pressure or before all the air exhausts. This results in quicker stops.

## Operating Data:

Pilot Pressure (Max):	100 psi
Valve Pressure (Max):	120 psi
Temp Range:	30° - 150° F (Nitrile) -40° - 150° F (EPDM) 30° to 350° F (FKM)
Flow Capacity (Cv):	3.5 max.
Cracking Pressure:	2 psi
Service:	Properly filtered and lubricated air or dry air



EXAMPLE: With the output pressure or trapped pressure at 80 psi the pilot pressure to open the valve must be a minimum of 55 psi. The valve will close when the back pressure drops to 40 psi.

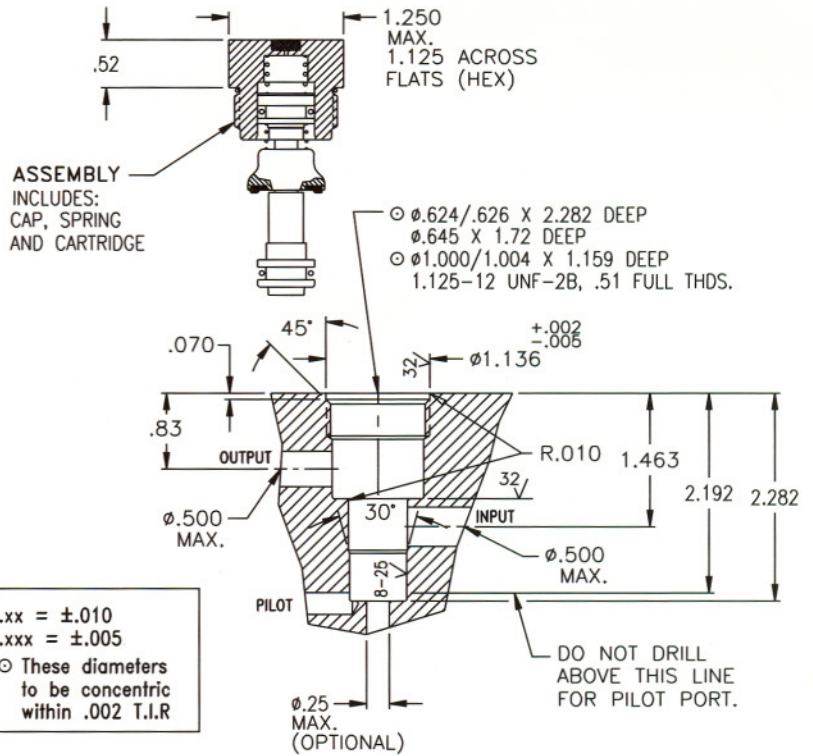
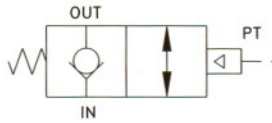
Model Assemblies	Nitrile	EPDM	FKM
Cartridge, End Cap, Adjusting Screw & Spring	BC4MAS-AD	BC4MAS-AD-T40	BC4MAS-AD-V
End Cap, Adjusting Screw & Spring	BC4ES-AD	BC4ES-AD-T40	BC4ES-AD-V
Cartridge Only	BC4MN	BC4MN-T40	BC4MN-V

# Pneumatic Cartridge Valve Adds Bubble Tight Locking to Your Product - For Custom Manifolds

- High Flow
- Bubble Tight Locking
- 350° Degrees F
- (-40°) Degrees F

## Basic Operation:

Maintains bubble tight in the event of a pressure drop or total loss of pressure. Insert into manifold or OEM product to add locking capabilities to your design.



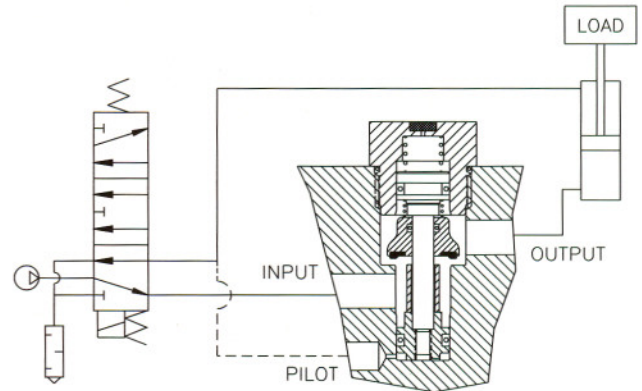
## Operating Data:

Max. Pressure: 120 psi  
 Min. Pilot Pressure: 40 psi  
 Temp Range: -20° - 150° F (Nitrile)  
 30° - 350° F (FKM)  
 -40° to 150° F (EPDM)

Flow Capacity (Cv): 3.5 max. (Depends on ports)  
 Orings (High Temp.) Fluorocarbon (FKM)  
 (Low Temp.) Ethylene Propylene (EPDM) & Molded Nitrile Poppet

Cracking Pressure: 2 psi  
 Pilot Ratio: 2:1 @ 80 PSI - (80 PSI @ output port requires 40 psi @ pilot port Properly filtered and lubricated air or dry air)

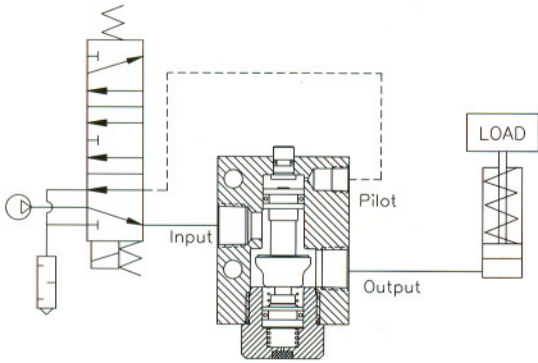
Service:



Typical Locking Circuit

Model Assemblies	Nitrile	EPDM	FKM
Cartridge, End Cap & Spring	BC4MAS	BC4MAS-T40	BC4MNAS-V
End Cap & Spring	BC4ES	BC4ES-T40	BC4ES-V
Cartridge Only	BC4MN	BC4MN-T40	BC4MN-V

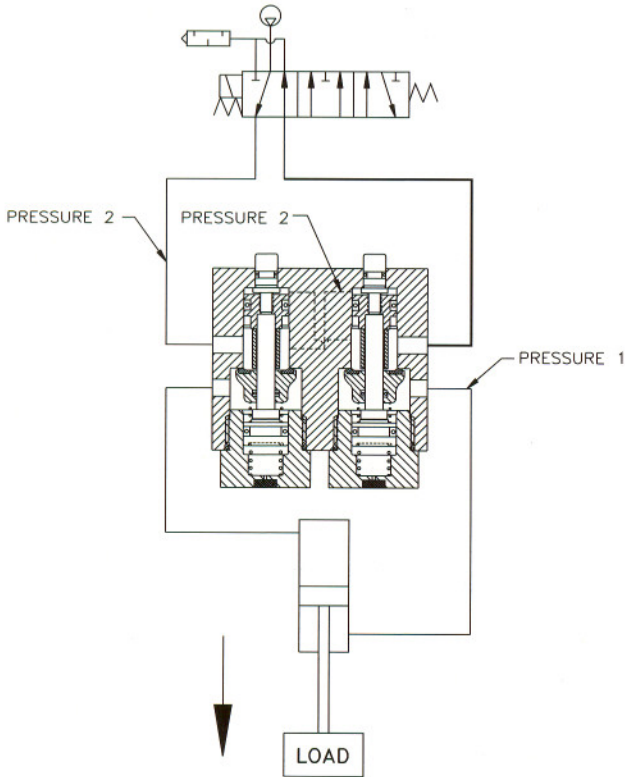




SINGLE ACTING CYLINDER WITH SPRING OR GRAVITY (LOAD) RETURN

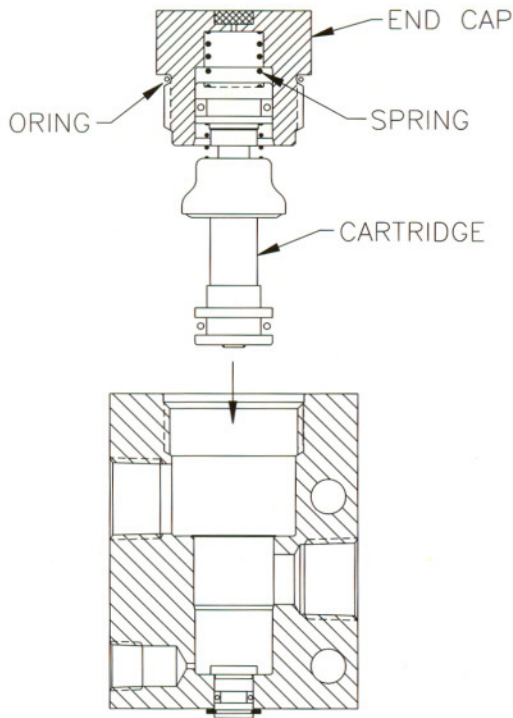
## Single Acting Circuit

A cylinder with a spring or gravity return can be locked in place with this circuit. Air pressure advances the cylinder and gravity or the spring will retract the cylinder.



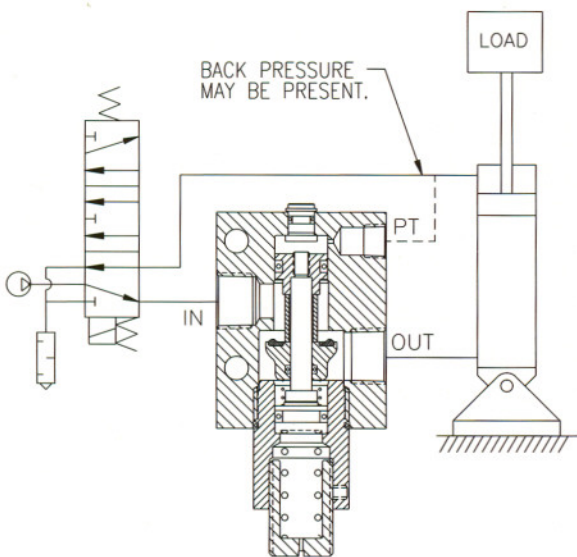
## Dual Check Circuit Ratio

A dual check should not be used if the load on the cylinder causes a pressure ratio greater than 2 to 1, between pressure #1 (retract) and pressure #2 (advance). The pressure to lower the load may be too low to pilot the valve open and allow air to escape from the rod side of the cylinder. If pressure #1 on the rod side is 80 psi, you will need a minimum pressure of 40 psi on the advance side of the cylinder, a ratio of 2 to 1, in order to function properly. The rod side pressure is intensified due to the smaller piston area on the air cylinder.



## Cartridge & Spring Replacement

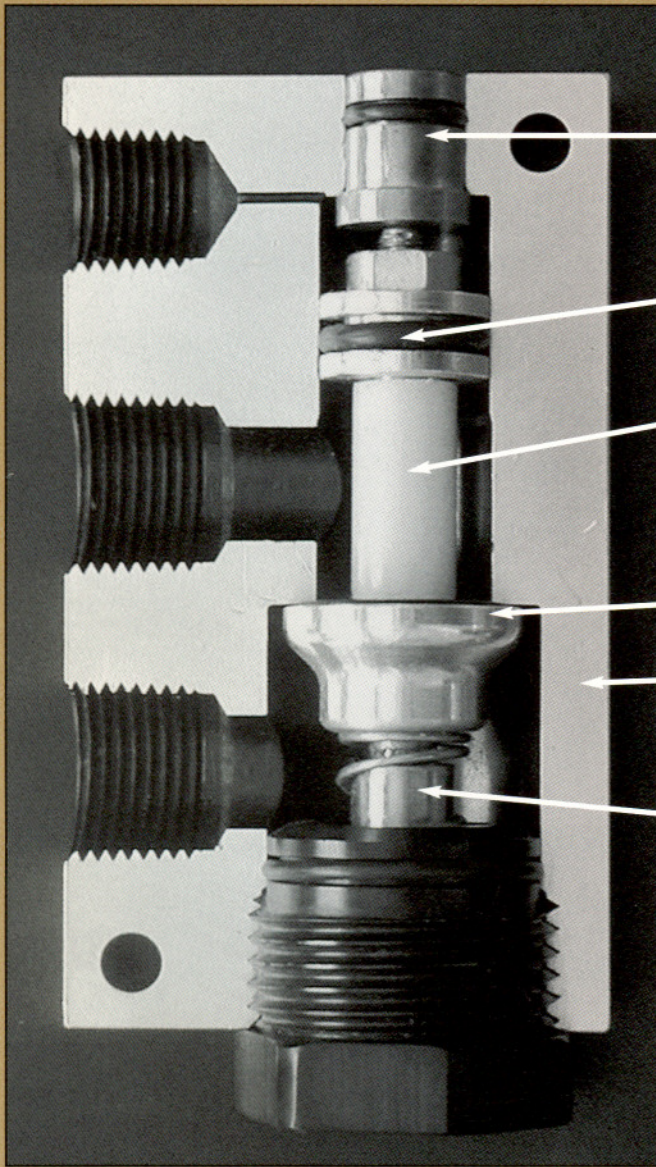
To replace the cartridge & spring, make sure all the pressure is released from the circuit. Remove the end cap, spring, and cartridge. Clean out any debris in the valve body and end cap. Inspect for excessive wear and scratches in the valve body and end cap. If there is excessive wear then the entire valve needs to be replaced. Insert the new spring and cartridge into the end cap. The oring friction will hold the whole assembly together. Screw the entire assembly back into the valve body and tighten to 20 ft. lb.



## Quicker Stopping

Back pressure in the pilot line may cause the poppet to remain open longer, resulting in cylinder drift before stopping. Using a pilot-operated check valve with an adjustable spring pressure can decrease drift, by closing the valve faster. This will also increase the pressure required to open the valve.

# NGT ADVANTAGES



*Manual release and flush  
manual release option to  
release trapped air*

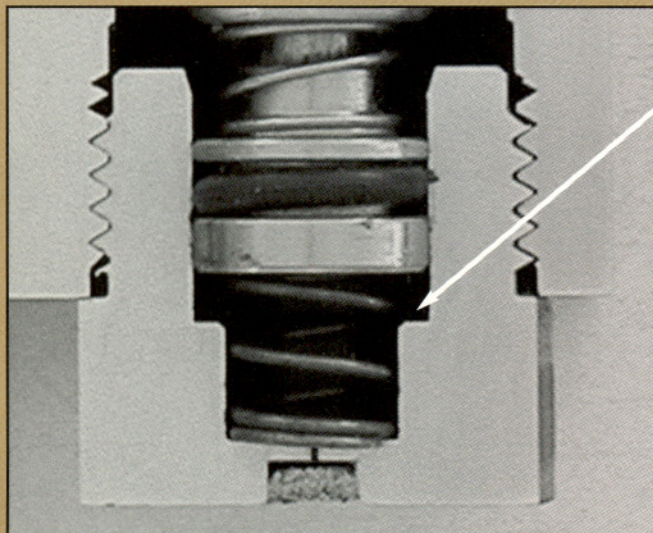
*Internally lubricated orings for  
longer life without lubrication*

*Balanced spool reduces force  
on the poppet and reduces the  
size of the pilot piston, for a  
smaller overall design package*

*Seal molded to the poppet*

*Hard coat anodized aluminum  
with teflon coating to reduce  
wear and increase seal life*

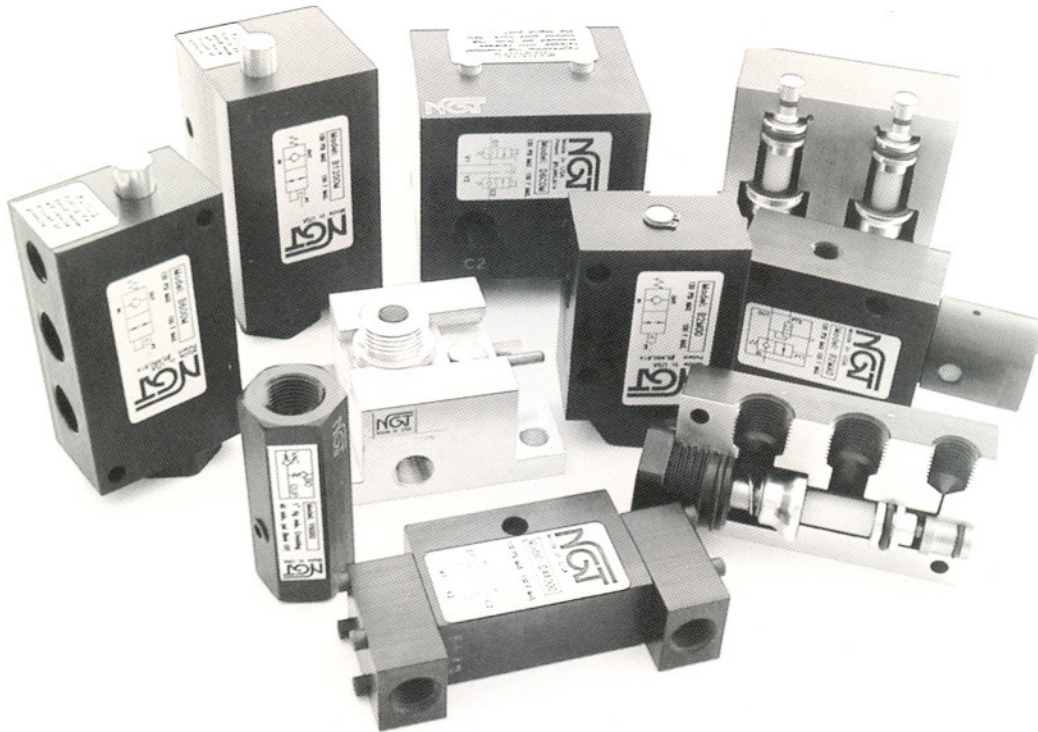
*Stainless steel piston rod  
eliminates corrosion*



*Cushion design reduces impact  
on the spool by reducing spool  
velocity. Air is forced through  
a small orifice when the spool  
shifts—causing the spool to  
slow down before impact*

# Custom Specialty Valves

We also manufacture custom pneumatic valves for special applications where smaller size, higher temperature, and greater flow may be required. NGT will quote projects in quantities of 50 to 100 pieces. If you cannot find someone to design and build your valve, give us a call. We don't mind being your last resort.



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**[www.ngtvalves.com](http://www.ngtvalves.com)**



**Specialty Valves**

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